Name: _____ Date: _____

The Little Tube Behind Your Ear Pops

Circle group

You ride up a long mountain road in a car. Your ears feel stuffed, like they have cotton in them. You swallow. Pop! Now sounds are normal. Why?

Behind each eardrum is a small space full of air. It is called the middle ear. The eardrum is a thin skin. It works best when the air pushes on both sides with the same force. Air outside pushes on one side. Air in the middle ear pushes on the other. Most of the time they match.

The air pressure changes when you go up a hill, ride in an elevator, or fly in a plane. Outside, it changes fast. The air inside is slow to change. The eardrum gets pushed to one side. That makes your ears feel full.

A thin channel fixes it. It is called the eustachian tube. It joins each middle ear to the back of your throat. It is mostly shut. But when you swallow, yawn, or chew, it opens for a moment. Air moves through. The push on both sides is even again. The eardrum relaxes, and you hear a pop.

So gum or a sip of water can help in a plane. Each swallow lets the tube open. If your ears stay blocked or hurt, tell a grown-up.

Questions

1. What is the middle ear?

_____

_____

2. When does air pressure change fast?

_____

_____

3. What does the eustachian tube join?

_____

_____

4. What makes the tube open for a moment?

_____

_____

5. Why do your ears feel full on a mountain road?

_____

_____

6. Why do sounds seem normal after the pop?

_____

_____

7. Why can gum help on a plane?

_____

_____

Words to know

eardrum: a thin skin inside the ear that shakes when sound arrives
pressure: the push that air or water puts on a surface
channel: a narrow path for air or liquid to flow along

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

The Little Tube Behind Your Ear Pops

Triangle group

You are riding in a car up a long mountain road when your ears suddenly feel stuffed, as if someone put cotton in them. You swallow, and with a small pop everything sounds normal again. That pop has a simple cause, and it involves a narrow passage that most people never think about.

Behind each eardrum is a small, air-filled space called the middle ear. The eardrum is a thin skin, and it works best when the air pressure on both sides is about the same. The outside air presses on one side, and the air in the middle ear presses on the other. Usually the two match.

Air pressure changes when you go up a hill, ride in an elevator, or fly in a plane. The pressure outside shifts quickly, but the air inside the middle ear stays behind for a moment. The eardrum gets pushed a little toward the side with less pressure, and that stretch is what makes your ears feel full or muffled.

The fix is a thin channel called the eustachian tube. It connects each middle ear to the back of the throat. Most of the time the tube is closed, but swallowing, yawning, or chewing makes it open for a moment. A bit of air moves through, the pressure on both sides evens out, and the eardrum relaxes with a pop or a click.

That is why chewing gum or sipping water can help during a flight. Each swallow gives the tube a chance to open. If your ears stay blocked for a long time, or they hurt, it is wise to tell a grown-up.

Questions

1. What is the middle ear?

_____

_____

2. When does air pressure change quickly?

_____

_____

3. What does the eustachian tube connect?

_____

_____

4. What actions make the tube open for a moment?

_____

_____

5. Why do your ears feel full on a mountain road?

_____

_____

6. Why does the pop make your hearing sound normal again?

_____

_____

7. Why can chewing gum help during a flight?

_____

_____

Words to know

eardrum: a thin skin inside the ear that shakes when sound arrives
pressure: the push that air or water puts on a surface
passage: a narrow way that lets something move through
muffled: sounding soft and unclear
channel: a narrow path for air or liquid to flow along

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

The Little Tube Behind Your Ear Pops

Square group

Imagine that you are riding in a car up a long mountain road when, quite suddenly, your ears feel stuffed, as though someone had pressed cotton into them. You swallow, and with a small pop everything sounds normal once more. That pop has a straightforward cause, and it involves a narrow passage that most people never think about.

Behind each eardrum lies a small, air-filled chamber called the middle ear. The eardrum is a thin membrane, and it performs best when the air pressure on both of its sides is roughly equal. The outside air presses on one side while the air in the middle ear presses on the other. Ordinarily the two pressures match.

Air pressure changes whenever you climb a hill, ride in an elevator, or travel in an airplane. The pressure outside shifts rapidly, but the air within the middle ear lags behind for a moment. The eardrum is pushed slightly toward the side with the lower pressure, and that stretching is what makes your ears feel full or muffled.

The remedy is a slender channel called the eustachian tube, which links each middle ear to the back of the throat. The tube generally remains closed, but swallowing, yawning, or chewing causes it to open briefly. A small amount of air passes through, the pressure on both sides equalizes, and the eardrum relaxes with a pop or a click.

That is why chewing gum or sipping water can be useful during a flight, since every swallow offers the tube a chance to open. If your ears remain blocked for a long time, or if they begin to hurt, it is sensible to tell a grown-up.

Questions

1. What is the middle ear?

_____

_____

2. In which two situations does air pressure change quickly?

_____

_____

3. What does the eustachian tube link?

_____

_____

4. Which actions cause the tube to open briefly?

_____

_____

5. Why do your ears feel full on a mountain road?

_____

_____

6. Why does hearing return to normal after the pop?

_____

_____

7. Why can chewing gum be useful during a flight?

_____

_____

Words to know

eardrum: a thin skin inside the ear that shakes when sound arrives
pressure: the push that air or water puts on a surface
passage: a narrow way that lets something move through
muffled: sounding soft and unclear
channel: a narrow path for air or liquid to flow along

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: The Little Tube Behind Your Ear Pops

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: The Little Tube Behind Your Ear Pops

Easier · 214 words · Flesch-Kincaid grade 1.4

1. A small space full of air behind the eardrum.
2. Going up a hill, riding in an elevator, or flying in a plane.
3. The middle ear and the back of the throat.
4. Swallowing, yawning, or chewing.
5. The outside pressure changes faster than the air inside, so the eardrum is pushed to one side.
6. The push on both sides of the eardrum is even again.
7. Each swallow lets the tube open.

Triangle: The Little Tube Behind Your Ear Pops

This passage · 273 words · Flesch-Kincaid grade 5.7

1. A small, air-filled space behind the eardrum.
2. Going up a hill, riding in an elevator, or flying in a plane.
3. The middle ear and the back of the throat.
4. Swallowing, yawning, or chewing.
5. The pressure outside changes faster than the air in the middle ear, so the eardrum is pushed to one side.
6. The pressure on both sides of the eardrum evens out.
7. Each swallow gives the tube a chance to open.

Square: The Little Tube Behind Your Ear Pops

Harder · 280 words · Flesch-Kincaid grade 8.3

1. A small, air-filled chamber behind the eardrum.
2. Climbing a hill, riding in an elevator, or traveling in an airplane.
3. The middle ear and the back of the throat.
4. Swallowing, yawning, or chewing.
5. The outside pressure shifts faster than the air in the middle ear, so the eardrum is pushed to one side.
6. The pressure on both sides of the eardrum equalizes.
7. Every swallow offers the tube a chance to open.